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## Awareness and attitude of parents toward pediatric dental treatment under general anesthesia

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### Original Article

#### Abstract

**BACKGROUND AND AIM:** Dental treatment under general anesthesia is critical for non-cooperative, low aged, and special needs' children. This study aimed to investigate the knowledge and attitude of parents about pediatric dental treatment under general anesthesia.

**METHODS:** This was a cross-sectional study among 100 parents of children who were referred to Babol School of Dentistry (Roohani Hospital) and Babol clinic Hospital, Iran, in 2012-2013 for dental treatment under general anesthesia. The questionnaire contained questions assessing the reasons for choosing dental treatment under general anesthesia, and the advantages and disadvantages of this method of treatment and parental satisfaction. The form was completed by the parents. Data were reported using descriptive statistics and analyzed by the Spearman correlation coefficient.

**RESULTS:** In this study, a questionnaire survey showed that the majority of parents were concerned about the health of their children and despite having some degree of awareness about side effects of general anesthesia and its high cost, they expressed a positive view toward that. A reduction of fear and anxiety and the possibility of performing several treatments in one session are among the benefits of this method. Non-cooperative children of low age with a high number of dental caries are the main recipients of this treatment method. This method was introduced to the majority of parents by the dentist treating their children.

**CONCLUSION:** This study showed parents accepted the costs and risks of this approach to maintain the oral health of their children after it was recommended by the pediatrician. Therefore, with sufficient awareness of society toward this treatment option, we can improve children's oral health and performance.

**KEYWORDS:** General Anesthesia, Parental Attitudes, Parental Awareness, Pediatric Dental Treatment

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Patients' behavior management is among the major issues in pediatric dentistry. Since many children are unable to sufficiently cooperate for dental treatment, their treatments are postponed. It causes the experience of severe pain and sometimes leads to loss of teeth.

The dental treatment under general anesthesia is one of the recommended treatment methods for such patients.<sup>1</sup> It should be noted that this method is not used for healthy cooperative patients with minimal dental treatment needs as well as

patients who the use of general anesthesia are prohibited for them.<sup>2</sup> Various studies have proved the value of this method in the dental treatment of children with special needs due to the vast nature of their needs, their limited cooperation power or particular medical condition.<sup>2-6</sup>

Several advantages are mentioned for the treatment of such children under general anesthesia including the treatment is completed in one session, the patient is pain-free and most importantly, it does not need child's cooperation.<sup>7-9</sup> It seems that

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dental treatment of children under general anesthesia has a positive psychological impact on treated children and reinforces positive views of parents and children about oral health.<sup>10-14</sup> This therapy also appears to bring some degree of changes in a child's life and behavior including increased frequency of brushing and reduced consumption of foods high in sugar.<sup>15</sup>

In this cross-sectional study, views of parents toward their child's dental treatment under general anesthetic technique was determined, and the causes and concerns about prescribing this type of treatment, its advantages and disadvantages and methods of avoiding the need to re-approach to this method have been discussed.

### Methods

In this cross-sectional study of descriptive - analytic type, 100 parents of children who received dental treatment under general anesthesia in Roohani Hospital affiliated with the Babol Dental School and Babol Clinic Hospital, Iran, over a year were selected. All of the parents participated voluntarily, and there was no compulsion to participate in this study. To this end, a four-part questionnaire was used. In the first part of the questionnaire, data about children are including sex, age, history of systemic disease, type of systemic disease and parent information including age, education and location were asked. In the second part, the background questions about the history of parents undergoing general anesthesia, the reason for this treatment, side effects, the way this method was introduced to them, positive and negative changes in behavior and health of children after anesthesia and proposed strategies for parents to prevent their children need for re-treatment by this method was evaluated. In the third part of the questionnaire, the questions about awareness were replaced. The definition of general anesthesia according to parents and its difference with conscious sedation,

advantages and problems of this type of treatment and the duration and appropriate place for this method was evaluated from the parents' perspective. The fourth part contains the attitudinal questions.

The ideas and views on the need for awareness of parents about the issue of general anesthesia before treatment, cause of parental concerns, assessment of their willingness to repeat this procedure in the case of need, parents opinion about the medication before general anesthesia, treatment costs and the lack of understanding and willingness of parents for this approach was questioned. It was valid in terms of content and outline. The used questionnaire was designed and prepared after referring to articles and authoritative sources and by the help of the experts in the field of pediatric dentistry, anesthesiology and statistics and correction of proposed reviews. The parents were contacted by phone, and they answered a series of questions. In the studied population, there is enough variety and the opportunity for participation of individuals from any group in terms of gender, age groups and health status of children as well as age groups, parental education level, and living area. Before the main study, a pilot study was performed using a questionnaire conducted on 10 patients and strengths and weaknesses were identified.

Given the experimental nature of these samples, the 10 individuals were not involved in the original study. Furthermore, to assess the reliability of questionnaire, 10% of samples were selected randomly and their answers were again collected 2 weeks after the end of phone conversation. The evaluation of questionnaire findings indicates that the minimum kappa in twice evaluation of questions was between 0.74 and 0.94 that has an appropriate reliability. No standard questionnaires were found in this area. After collecting the information (about a year), the descriptive statistical method and were used for statistical analysis.  $P \leq 0.05$  is considered

as significant in this study.

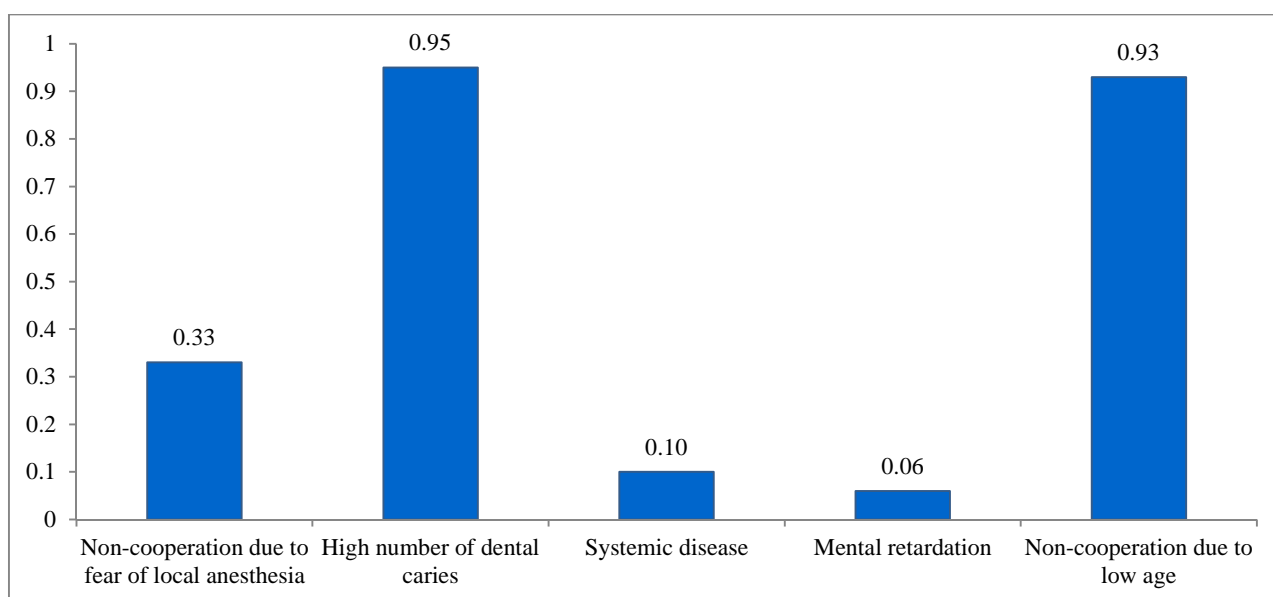
### Results

In the present study, 100 cases of parents with fathers mean age of  $35.26 \pm 5.79$  years and mothers mean age of  $30.14 \pm 5.29$  years were participated. 49% of fathers and 55% of mothers had a high school diploma, and rest of them had diploma and above. 88% were urban and 12% were living in rural area. 28% of fathers and 41% mothers themselves had undergone general anesthesia. The mean age of children was  $43.85 \pm 11.46$  months. The mean decay, missing, filling, teeth of children was calculated. Out of 100 children, 12 had systemic disease and 2 patients were mentally retarded. 92% of parents had acted on the advice of the dentist. The main reasons for choosing this method of therapy along with relevant statistical results are shown in figure 1.

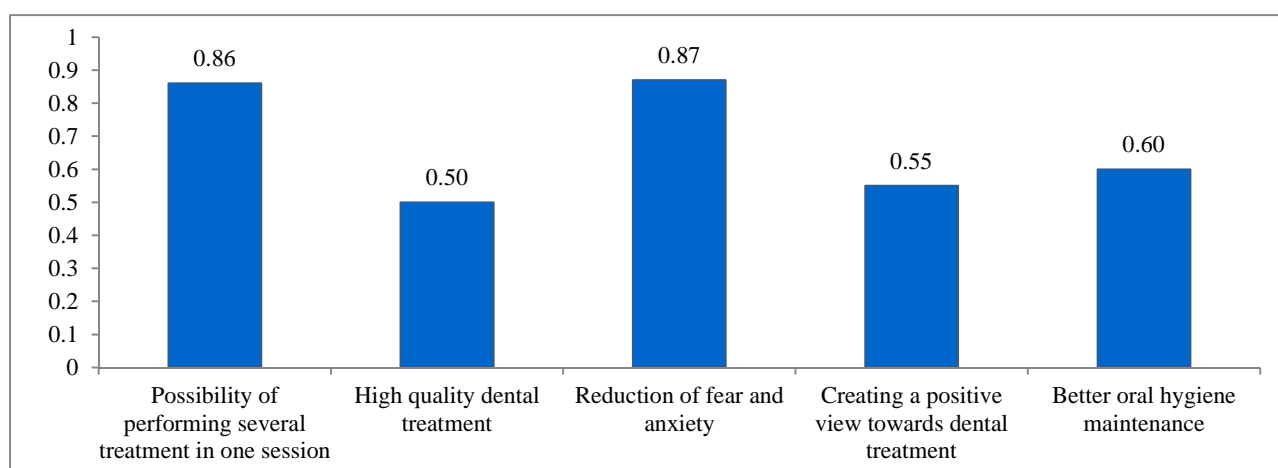
About 74% of parents reported that no complication occurred to their children after general anesthesia. Tongue and lip swelling (11%) and sore throat (7%) were the most common reported side effects. Disobedience (7%) was the largest negative change in behavior and willingness to comply with

hygiene and brushing (8%) was the most positive change in children's behavior. Parents reported the advantages and disadvantages of the general anesthesia in pediatric dental treatment that are shown in figures 2 and 3.

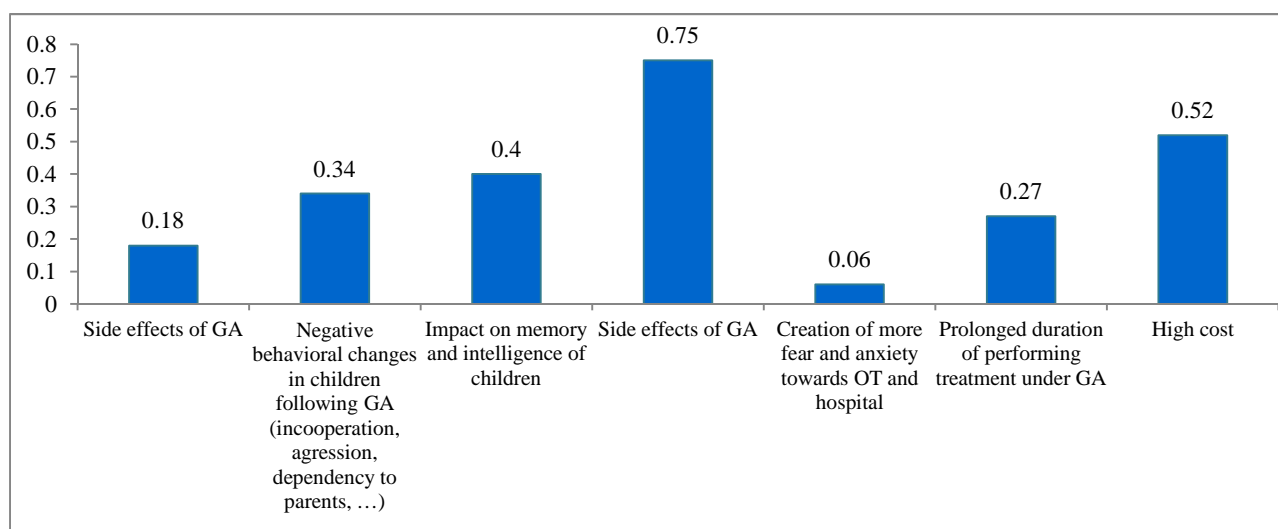
About 98% of parents were anxious about the treatment under general anesthesia that the greatest concern (68% of them) happened prior to the treatment. To avoid the need for re-treatment of children, parents suggested better maintenance of oral health (26%), regular visits to the dentist (24%) and diet control (3%). 24% of parents were aware of the proper meaning of general anesthesia that was a controlled level of consciousness and 55% of parents knew it synonymous with conscious and non-conscious sedation. 77% of parents agreed with the repeat of this treatment for their child if required. 73% of them suggested this method of treatment to their closed ones who had similar problems. 83% of parents considered sedative medication necessary before deciding to use general anesthesia. Overall, parents had a positive view toward this treatment method. The satisfaction rate is shown in the following figure 4.



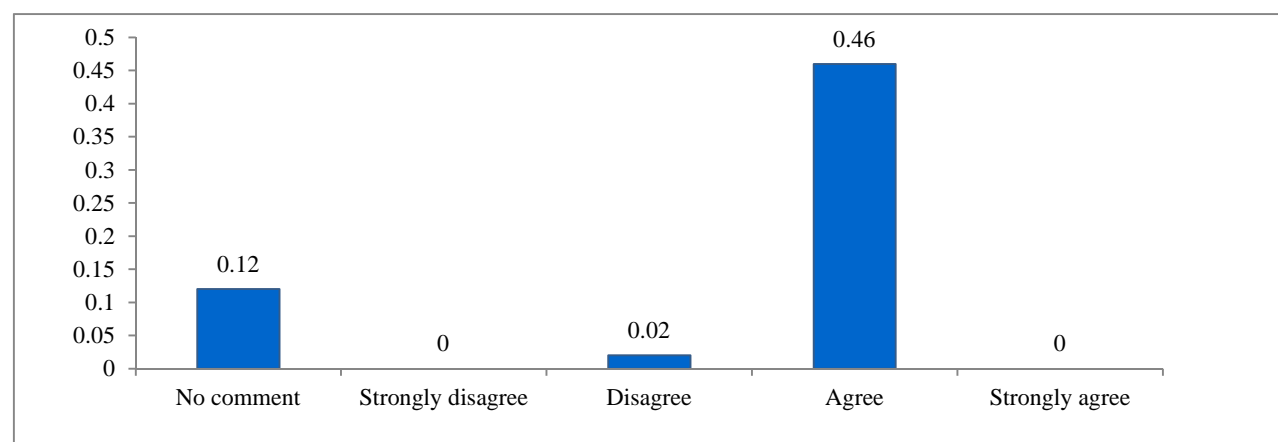
**Figure 1.** Frequency of parents of children based on cause of referral for pediatric dental treatment under general anesthesia (GA)



**Figure 2.** Frequency of parents on their attitudes about the benefits of dental treatment under general anesthesia (GA) in pediatric dental treatment



**Figure 3.** Frequency of parents on their attitudes about the disadvantages of general anesthesia in dental treatment for children  
GA: General anesthesia



**Figure 4.** Frequency of parents who considered general anesthesia (GA) necessary in pediatric dental treatment

## Discussion

Parents participating in this study had an optimal level of awareness about the advantages and disadvantages of various aspects of anesthetic techniques in pediatric dental treatment and to some degree, almost all of parents (98% of them) were concerned about their children. However, the view of the majority of them was positive about the use of this method when necessary.

Based on the results obtained in this study, regardless of the difficulties and complications of general anesthesia and the high cost of treatment, parents were generally satisfied with the dental treatment under general anesthesia. This was consistent with previous studies such as the study performed by Ansari et al.<sup>16</sup> at Mofid Hospital of Tehran, Iran. The statistical results obtained by assessment of causes of approach to this method of treatment indicated that the inability of low age children to cooperate and the high number of dental caries are among the major causes to choose this treatment method.

The similar results were obtained by Ansari et al.<sup>16</sup> and Gharavi and Sohani,<sup>17</sup> Albadri et al.<sup>18</sup> reported extensive decay and pain in more than two quadrants as the most common cause of referral of patients. The post-operative complications of anesthesia include swelling of lips and tongue and sore throat from intubation during surgery. It is consistent with the results of Ansari et al. study,<sup>16</sup> but it contradicts with the Gharavi and Sohani<sup>17</sup> study that listed vomiting and restlessness as the most common complications. According to Farsi et al.<sup>19</sup> study performed in Jeddah Hospital, Saudi Arabia major complications are pain and bleeding. This conclusion was different from the results of our study.

This study determined that disobedience was the most negative changes in child behavior and more inclination to use a toothbrush, was the most positive change in child behavior after anesthesia. In the study

performed by Ansari et al.<sup>16</sup> aggression and solving the problem of non-cooperation besides anxiety reduction and in the study performed by Golpayegani<sup>20</sup> anger, excitement and improvement of appetite, were in the order mentioned as the most negative and positive behavioral changes in children. The results of this study were not similar to our results. This study indicates that according to parents, fear and anxiety reduction besides the possibility of performing several treatments in one session are the main advantages and post-operative complications are the main disadvantages of this treatment method. This is similar to the results of Ansari et al.<sup>16</sup> and Eshghi et al. studies.<sup>21</sup>

In our study, no significant relationship was observed between age, education and place of residence of parents with their knowledge and attitudes about dental treatment under general anesthesia in pediatric dental treatment. It was in accord with the statistical results obtained by Ansari et al.<sup>16</sup> But in their study, a significant relationship was found between mothers' age and their views about the advantages of this method. Parents from Tehran and other cities expressed different percentages of acceptance toward different methods of behavior management. This result is not consistent with our results. Likely reason for this difference was the special situation of our study area. Babol city is surrounded by several villages. They have better facilities, amenities, and information than other rural areas of the country. Therefore due to the blend of urban and rural and cultural similarities of people of these regions, no apparent difference was observed in parental knowledge and attitudes between urban and rural areas.

Further research to identify barriers and problems that exist in the field of parental acceptance toward anesthesia, can eventually lead to the establishment of good oral health behaviors in children.

## Conclusion

The present study showed that the majority



of parents were informed about this method by the dentists treating their children. Practitioners' role in this field is essential. This method of treatment can accelerate and progress the process of health care and oral health in uncooperative children. Consequently, with sufficient awareness about such treatment options, children's oral health and performance can improve.

### Conflict of Interests

Authors have no conflict of interest.

### Acknowledgments

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### References

1. Rule DC, Winter GB, Goldman V, Brookes RC. Restorative treatment for children under general anaesthesia. The treatment of apprehensive and handicapped children as clinic out-patients. *Br Dent J* 1967; 123(10): 480-4.
2. Chung SS, Casas MJ, Kenny DJ, Barrett EJ. Clinical relevance of access targets for elective dental treatment under general anesthesia in pediatrics. *J Can Dent Assoc* 2010; 76: a116.
3. Jamjoom MM, al-Malik MI, Holt RD, el-Nassry A. Dental treatment under general anaesthesia at a hospital in Jeddah, Saudi Arabia. *Int J Paediatr Dent* 2001; 11(2): 110-6.
4. Persliden B, Magnusson BO. Medical complications of dental treatment under general anaesthesia in children. *Swed Dent J* 1980; 4(4): 155-9.
5. Enger DJ, Mourino AP. A survey of 200 pediatric dental general anesthesia cases. *ASDC J Dent Child* 1985; 52(1): 36-41.
6. El-Bialy WB, Al-Rashid BA, El-Tanani H. Extraction of teeth under general anaesthesia for outpatient children and mentally retarded patients in Kuwait. *Egypt Dent J* 1992; 4: 257-62.
7. Harrison MG, Roberts GJ. Comprehensive dental treatment of healthy and chronically sick children under intubation general anaesthesia during a 5-year period. *Br Dent J* 1998; 184(10): 503-6.
8. Holt RD, Rule DC, Davenport ES, Fung DE. The use of general anaesthesia for tooth extraction in children in London: a multi-centre study. *Br Dent J* 1992; 173(10): 333-9.
9. Murray JJ. General anesthesia and children's dental health: present trends and future needs. *Anesth Pain Control Dent* 1993; 2(4): 209-16.
10. Anderson HK, Drummond BK, Thomson WM. Changes in aspects of children's oral-health-related quality of life following dental treatment under general anaesthesia. *Int J Paediatr Dent* 2004; 14(5): 317-25.
11. White H, Lee JY, Vann WF. Parental evaluation of quality of life measures following pediatric dental treatment using general anesthesia. *Anesth Prog* 2003; 50(3): 105-10.
12. Savanheimo N, Vehkalahti MM, Pihakari A, Numminen M. Reasons for and parental satisfaction with children's dental care under general anaesthesia. *Int J Paediatr Dent* 2005; 15(6): 448-54.
13. Amin MS, Harrison RL. Change in parental oral health practices following a child's dental treatment under general anaesthesia. *European Archives of Paediatric Dentistry* 2006; 1(2): 118-22.
14. Acs G, Pretzer S, Foley M, Ng MW. Perceived outcomes and parental satisfaction following dental rehabilitation under general anesthesia. *Pediatr Dent* 2001; 23(5): 419-23.
15. Amin MS, Harrison RL, Weinstein P. A qualitative look at parents' experience of their child's dental general anaesthesia. *Int J Paediatr Dent* 2006; 16(5): 309-19.
16. Ansari GH, Biriya M, Bohrani Z. Opinion of parents regarding dental treatment under general anesthesia in patients referred to Mofid Children Hospital, Tehran [Thesis]. Tehran, Iran: Shahid Beheshti Dental School, Shahid Beheshti University of Medical Sciences 2009. [In Persian].
17. Gharavi M, Sohani GH. The assessment of general anesthesia in pediatric dental treatment. *J Mashad Dent Sch* 2008; 32(1): 41-6. [In Persian].
18. Albadri SS, Lee S, Lee GT, Llewelyn R, Blinkhorn AS, Mackie IC. The use of general anaesthesia for the extraction of children's teeth. Results from two UK dental hospitals. *Eur Arch Paediatr Dent* 2006; 7(2): 110-5.
19. Farsi N, Ba'akdah R, Boker A, Almushayt A. Postoperative complications of pediatric dental general anesthesia

procedure provided in Jeddah hospitals, Saudi Arabia. BMC Oral Health 2009; 9: 6.

20. Golpayegani MV. The effect of general anesthesia in postoperative behavior complications of pediatric dental treatments in patients' referred to Mofid Children Hospital, Tehran [Thesis]. Tehran, Iran: Shahid Beheshti Dental School, Shahid Beheshti University of Medical Sciences 2010. [In Persian].
21. Eshghi A, Rezaeifar M, Jafarzadeh Samani M, Malekafzali B, Eftekhari M. Evaluation of parental view toward dental treatment under general anesthesia in Isfahan. J Zanzan Univ Med Sci 2010; 18(73): 67-75. [In Persian].